IN THE CLAIMS:

1. (Currently Amended) A superconducting resistive current limiter adapted for a nominal voltage U_N and carrying a nominal current I_N at a working temperature T_N, with at least one track ~~(1)~~ of length L_{tot} comprising a thin-film of high-temperature superconducting material with a critical current density J_C and an electrical bypass layer in contact with the film, wherein the track ~~(1)~~ consists of a multitude of constrictions ~~(2)~~ having a total length L_C and each having an approximately constant critical current $I_{C,C}$ equal to the nominal current I_N and being separated from each other by connecting sections ~~(3)~~ having a critical current $I_{C,S}$ larger than I_N,

~~characterized in that~~ wherein the total resistance R_C of the constrictions ~~(2)~~ at working temperature T_N is adapted to cause a voltage drop equal to the nominal voltage U_N at an initial fault current I_b limited to a value below a prospective fault current.

2. (Currently Amended) The current limiter according to claim 1, ~~characterized in that~~ wherein the resistance R_C of the constrictions ~~(2)~~ at an initial fault current I_b with a current density J_b of approximately 1.5 times J_C flowing in the constrictions ~~(2)~~ is adapted to cause a voltage drop $U_C = R_C$ times I_b equal to the nominal voltage U_N.

3. (Currently Amended) The current limiter according to claim 2, ~~characterized in that~~ wherein an averaged reduced resistivity ρ_C of the constrictions ~~(2)~~ at working temperature T_N and at the initial fault current density J_b is adapted to limit the surface power density p_b dissipated by the constrictions ~~(2)~~.

4. (Currently Amended) The current limiter according to claim 3, ~~characterized in that~~ wherein the averaged reduced resistivity ρ_C of the constrictions ~~(2)~~ is given by $\rho_C = p_b / J_b^2 \cdot e$, wherein e is the thickness of the superconducting film at the constrictions.

5. (Currently Amended) The current limiter according to claim 4, ~~characterized in that~~ wherein the conductivity of the bypass layer is higher along the constrictions ~~(2)~~ than along the connecting sections ~~(3)~~.

6. (Currently Amended) The current limiter according to ~~one of claims 1 to 4, characterized in that~~ claim 1, wherein the constrictions ~~(2)~~ are divided into two or more paths ~~(20)~~ electrically connected in parallel.